

PATENT SPECIFICATION

708,528



Date of Application and filing Complete Specification: Dec. 13, 1950.

No. 30441/50.

Application made in Sweden on Dec. 27, 1949.

Application made in Sweden on April 20, 1950.

Complete Specification Published: May 5, 1954.

Index at acceptance:—Classes 20(1), A8; and 108(1), A4.

COMPLETE SPECIFICATION

Transportable Housing Structures

I, GEORG IVAR OTTO MOLTKE-HANSEN, a Norwegian citizen, Avenue Latérale 85, Brussels, Belgium, formerly of Stortingsgate 28, Oslo, Norway, do hereby declare the invention, for which I pray that a patent may be granted to me, and the method by which it is to be performed to be particularly described in and by the following statement:—

The present invention which relates to a structurally and functionally improved transportable housing unit and, in its more specific aspects, aims to provide a structure the parts of which may readily be extended and retracted with respect to each other.

It is an object of the invention to provide a structure of this type the parts of which, when in extended position, will furnish a required and large enclosure which will provide ample space; the parts, in retracted position, furnishing a compact structure which, without traffic difficulties, will be capable of readily traversing all usual types of roads. It is, in short, a transportable housing structure comprising a non-telescopic housing section consisting of a roof, lateral walls and floor, and two laterally telescoping housing sections, each consisting of a roof, two lateral walls and one longitudinal wall, slidable in opposite directions, and to either side of the non-telescopic housing section one housing section entirely cover the roofs of the two other housing sections when the unit is in collapsed or closed position, articulated side-panels hinged to the longitudinal sides of the non-telescopic housing section's floor, movable from a vertical into a horizontal position in which position they serve as floor and support for the laterally telescoping housing sections, the structure being characterized by the fact that the width of each of the telescoping housing sections as measured in the direction of the telescopic expansion of the structure is approximately the same as that of

the non-telescopic housing section and that of the housing sections, in the retracted position covers the two other housing sections in their full length and width.

Another characteristic feature of the structure is that, in its retracted position, no window or door will be apparent. This is obtained by the structure having neither window nor door in the outside housing section's lateral walls and by the cover provided by the articulated side-panels to the structure's side-walls.

Among further objects of the invention are those providing a housing structure composed of several portions which may readily be extended and retracted with respect to each other and in which, when the parts are retracted, these parts will provide a housing structure of compact design, completely protected on all sides when closed and yet being able to expand to three times its original housing capacity when fully expanded. Moreover contained units (such as articles of furniture) may be secured in any desired fashion against displacement with respect to various portions of the enclosure so that, whether these portions are retracted or extended relatively to each other, the units will be in proper place therein.

Still another object is that of providing a housing unit including relatively few parts, being capable of ready association to provide a unitary structure which will be uncomplicated and easy to operate and be able to suffer long effective service.

With these and other objects in mind reference is had to accompanying sheets of drawings illustrating practical embodiments of the invention and in which:—

Figure 1 is a side elevation of one form of the transportable housing structure;

Figure 2 is an end view thereof with the parts in the position shown in Fig. 1;

Figure 3 is a view similar to Figure 2 but showing the articulated, collapsible

[Pri

side-panels partly extended;

Figure 4 is a view similar to Figure 3 but illustrating the articulated side-panels completely extended;

5 Figure 5 is still another end view illustrating the telescoping sections in a position just short of complete extension;

Figure 6 illustrates such complete extension.

10 Figure 7 is a sectional plan view of the assembly as shown in Figure 6;

Figure 8 is a perspective view of an alternative form of the structure;

Figure 9 is a transverse sectional view 15 taken through the assembly as shown in Figure 8; and

Figure 10 is a fragmentary sectional view, in somewhat enlarged scale, showing the hinged ramp of access used as a 20 platform or verandah.

The transportable housing structure illustrated in Figures 1 to 7 show the unit as it appears in an alternative caravan form, i.e. mounted directly on its own 25 chassis 2 with bogie wheel unit 3 and pivoting wheel 4. It is understood, however, that the box-shaped, collapsed housing structure, without wheels, may be transported by lorry, rail, or boat as 30 would any large sized case or box.

Articulated side-panels 11, cover the housing structure side-walls when the assembly is in closed position as illustrated in Figures 1 and 2. They fold out 35 and down, in prolongation of the central housing section's floor, when completely extended. The housing structure itself is made of three sections. Figures 1—7 show three sections, the middle one of which is 40 fastened, in a stationary position, to a floor portion and in this instance also to the chassis. The uppermost sliding or telescopic housing section 6 and the inside telescopic housing section 5, are so 45 designed as to slide out laterally to each side of the middle section 1. They both are, and this is an important feature of this invention, of approximately the same size as the middle section, the outside section being slightly larger and the inner section slightly smaller. The fact that the expandable sections are practically as 50 wide as the middle section gives the fully expanded unit unusual width. The housing capacity thus obtainable is practically 55 three times that of the unit before expansion.

Guides 8, are provided in the middle housing section's floor, running alongside 60 and to each side of the end-walls 7. The telescoping sections 5 and 6 run on these guides, for expansion and retracting operations, until stopped by the catches 9 and 10.

65 In the sectional plan view of Figure 7

an example of room and furniture arrangement of the housing structure is illustrated. Access to the unit is gained through door 13, flanked on both sides by 70 closets. Entire side section 6 provides space for a living room while a kitchen, bathroom and closets are occupying most of the remaining space of the middle section 1. Bedrooms are planned in side 75 section 5. The beds are attached to this section's outer walls. When the assembly is closed and the telescoping sections 5 and 6 slide into place over the middle sections's floor, the beds in section 5 will slide inwards and fit into openings pro- 80 vided in the lower part of the closet panels and of the bathroom's outer wall.

Other arrangements of the units furniture and equipment may be provided. The main object with regard to such arrange- 85 ments, is to utilize as rationally and as efficiently as possible, the housing structure's whole storing capacity when it is in closed or collapsed position. To achieve this, any furniture, any machines or 90 other equipment that the housing unit will contain, are fastened to the central housing section's floor or to the telescoping housing section's lateral walls, in such a way that no item 95 will be in the way of another item. Thus, all items fastened to the telescoping housing sections will slide in and fit under, above or alongside any items fastened to the middle section's floor by 100 bolts, welding or other means.

According to the use which is made of the housing structure the items it will contain vary. If used for sleeping quarters it will contain bunks or beds and closets 105 or cupboards. If used as a mobile or transportable office it will contain desks, shelves, files, book-cases and typewriters, dictographs, and the like. If used as a workshop it will be equipped with 110 all the required machines and tools. If used as an operation room for military signal corps, it will contain all equipment needed for field work. It may be equipped as a transportable operation room for an 115 army medical corps, units. In each instance it will be a great advantage that so many items and such a considerable quantity of furniture, machines or other equipment may be stored in the assembly 120 when it is closed whilst all the required space needed for using the equipment, is obtained when the unit is expanded.

The alternative form of housing structure shown in Figures 8, 9 and 10, shows 125 a flap or hinged ramp 14 in the side-wall 14 of the sliding housing section 6, providing, with wide wheel guides 16, a means of access to the housing structure's floor level for a motorear or other vehicle. 130

When the housing structure is used as a caravan legs or jacks 12 are used, whether the structure is used as a house or as a garage. The wheel guides or running boards 16, are articulated to the flap and may serve alternatively as legs that will support the flap or ramp 15 on a level with the housing structure's floor when it is to be used as a platform or verandah.

All embodiments illustrated and described are only to be considered as examples while constructive details of the various parts of the assembly may vary without departing from the invention as it is defined by the appended claims.

Although the illustrated structure shows the sliding housing sections 5 and 6 to be operated for a lateral extension of the unit, it is evident that the telescopic or sliding sections may be made to operate lengthwise without departing from the invention as defined by the appended claims.

What I claim is:—

1. A transportable housing structure comprising a non-telescopic housing section consisting of a roof, lateral walls and floor, and two laterally telescoping housing sections, each consisting of a roof, one longitudinal wall and two lateral walls, slidable in opposite directions and to either side of the non-telescopic housing section, one housing section entirely covering the roofs of the two other housing sections when the unit is in closed position, articulated side-panels hinged to the longitudinal sides of the non-telescopic housing section's floor, movable from a vertical into a horizontal position in which position they serve as floor and support for the laterally telescoping housing sections, characterised by the fact that the width of each of the telescoping housing sections, as measured in the directions of the telescopic expansion of the structure, is approximately the same as that of the non-telescopic housing section and that one of the housing sections in the retracted position covers the two other housing sections in their full length and width.

2. A transportable housing structure according to claim 1, characterised by a telescoping housing section, covering, when the unit is in closed position, the non-telescopic housing section.

3. A transportable housing structure according to either of the previous

claims, characterised by a non-telescopic housing section, covering with its roof and lateral walls, when the unit is in closed position, a telescopic housing section, of which the longitudinal wall is opposite to that of the other telescopic housing section.

4. A transportable housing structure according to any of the previous claims, characterised by the fact that the movable side-panels are large enough to cover any windows or doors there may be in the assembly's side-walls when they are folded up in closed position.

5. A transportable housing structure according to any of the previous claims, characterised by the fact that the outer housing section's lateral walls have no windows, door or other openings, these walls providing thereby required protection for any such openings in the inner housing sections lateral walls when the assembly is in closed position.

6. A transportable housing structure according to any of the previous claims, characterised by an articulated flap being provided in one of the telescopic housing sections' longitudinal walls and so placed that, in folded down position, it may be used as a ramp, providing a means of access from the ground to the housing assembly's floor, for a vehicle.

7. A transportable housing structure according to claim 6, characterised in that the flap is in particular connection with the lower edge of the opening it covers in closed up position in the longitudinal wall of the telescoping housing section.

8. A transportable housing structure according to claims 6 and 7, characterised in that the flap's length is prolonged by attachments hinged thereto, so placed and of such shape as to be fit to lengthen the ramp of access for a vehicle, or to serve as support for the flap when it is used in horizontal position, as a verandah.

9. A transportable housing structure according to any of the previous claims, where the heavy equipment it may contain, such as furniture, machines, technical equipment, etc., will be stored on and fastened to the unit's central, non-collapsible floor, characterised in that additional equipment is fastened to the inside of the innermost telescoping housing section's lateral walls and longitudinal wall, in such a manner as to fit above, under or alongside any equipment stored on or fastened to, the central and

non-telescopic housing section's floor and thus utilise to the utmost any space enclosed in the unit when it is in closed position.

- 5 10. A transportable housing structure substantially as hereinbefore described, with reference to the accompanying drawings.

Dated this 13th day of December, 1950.

HASELTINE, LAKE & CO.,
28, Southampton Buildings,
Chancery Lane, London, W.C.2,
England, and

19—25, West 44th Street, New York,
U.S.A.,

Agents for the Applicant.

Leamington Spa: Printed for Her Majesty's Stationery Office, by the Courier Press.—1954.
Published at The Patent Office, 25, Southampton Buildings, London, W.C.2, from which
copies may be obtained.

708,528 COMPLETE SPECIFICATION

3 SHEETS

This drawing is a reproduction of
the Original on a reduced scale.

SHEET 1

Fig. 1.

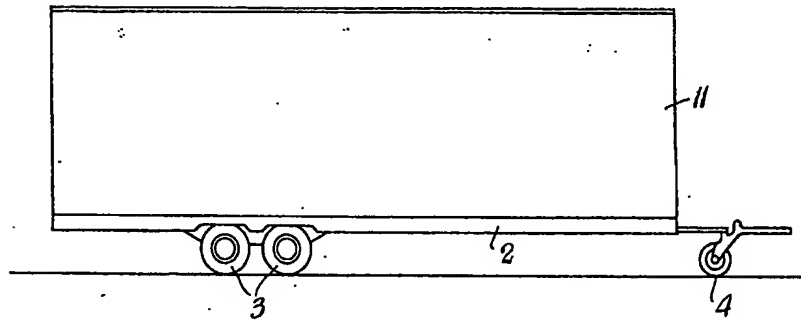


Fig. 2.

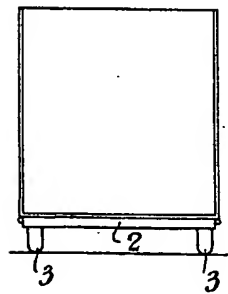


Fig. 3.

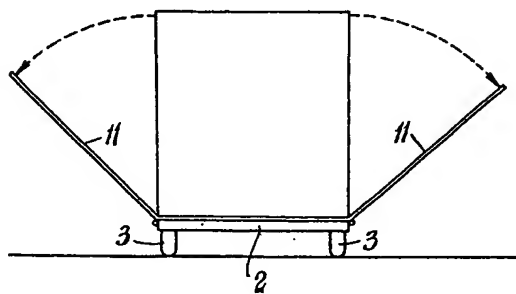
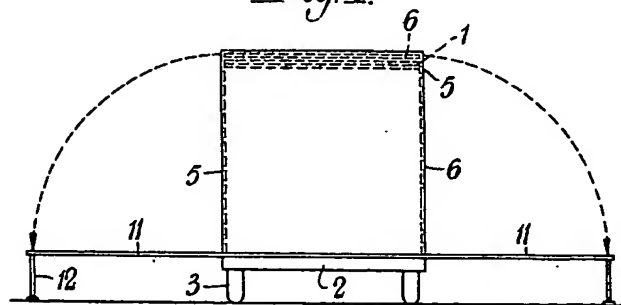
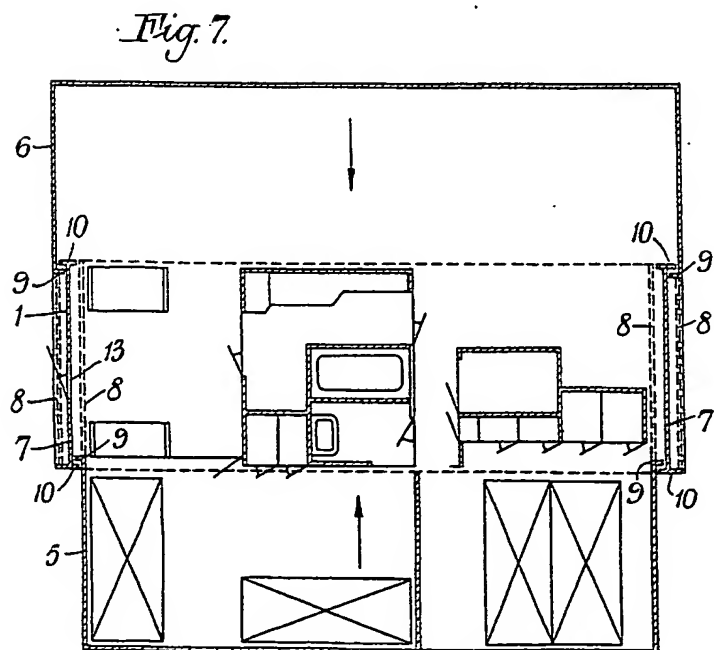
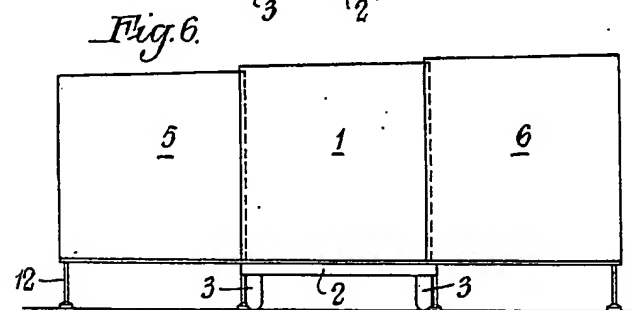
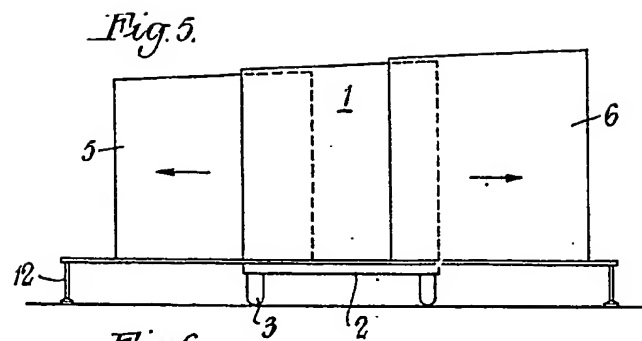


Fig. 4.





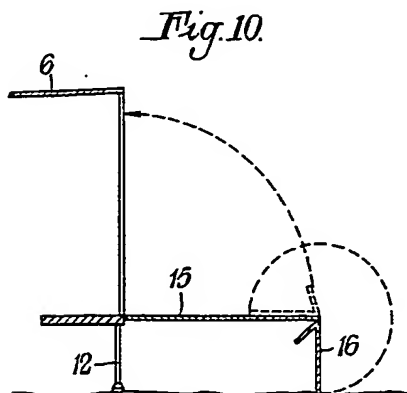
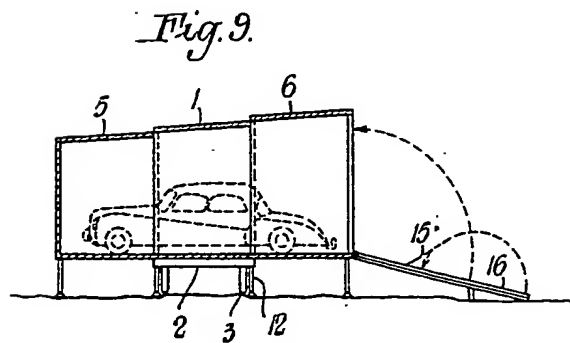
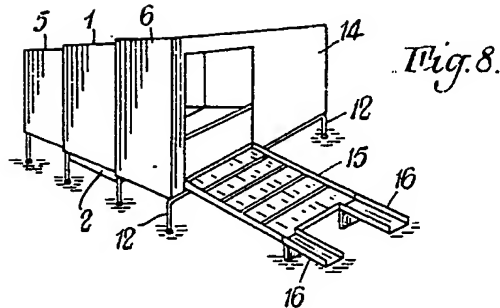
BEST AVAILABLE COPY

708,528 COMPLETE SPECIFICATION

3 SHEETS

This drawing is a reproduction of
the Original on a reduced scale.

SHEETS 2 & 3



9

8

7

6

708,528 COMPLETE SPECIFICATION
 3 SHEETS This drawing is a reproduction of
 the Original on a reduced scale.
 SHEETS 2 & 3

